

Petr Stepanov

Software developer. User interface designer.

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Ph.D. graduate in physics with focus in GUI **desktop software development** for scientific applications. More than 5 years in website and **web applications development**. Strong **user interface** (UI) and **user experience** (UX) design skills.

Computer Science Skills

- **Essentials.** Git, SVN, SSH, Linux, and Terminal usage. BASH scripting. IDEs: Eclipse, Xcode, Visual Studio Code (VS Code). Project management: JIRA, Trello.
- **Desktop app development.** C/C++, GNU make, CMake. Frameworks: Qt, CERN ROOT, Geant4. Java and Swing. Python.
- **Frontend:** HTML, CSS (LESS and SASS), Bootstrap, responsive web design, JavaScript and jQuery, npm, gulp, AngularJS, React.js. Google Web Toolkit. PHP and WordPress themes development.
- **Backend.** Node.js, EJS, Java.
- **UI/UX design.** Figma, Sketch, InVision Studio, Adobe XD, Adobe Photoshop, Adobe Illustrator, Inkscape, Blasamiq, Blender.
- **Apple iOS.** Fundamental Swift skills. User interface development with UIKit and storyboards.

Work Experience

C++ Software Developer

[Thomas Jefferson National Laboratory \(JLab\)](#), Newport News, VA, USA.

Jul 2020 - Current

- Applied CERN ROOT framework (C++) to perform statistical analysis of a significant amount (over 100 GB) of the raw experimental data of the [Kaon LT](#) experiment at JLab. [Link to GitHub](#).
- Utilized SLURM environment on [JLab supercomputer environment](#) to run resourceful particle simulations on multiple computing nodes at the same time. This decreased the wall computation time by more than 10 times.
- Proposed and implemented RAMDisk functionality on the development environment. This lead to an over 60% increase in source code indexing time.

Software Developer • Postdoctoral Researcher

[Catholic University of America \(CUA\)](#), Washington, DC, USA.

Jul 2020 - Current

- Applied Machine Learning (ML) TMVA framework to perform binary classification of thousands of signals from a data acquisition (DAQ) setup. [Link to GitHub](#).
- Developed a computer simulation based on the Geant4 framework (C++, CMake, Eclipse IDE, gdb) to study optical properties of a novel scintillation material to be used in the EIC detector system. [Link to GitHub](#).
 - Program accounts on scintillation material properties - composition, transmittance, luminescence.
 - Code reconstructs detector response (PMT or MPPC) depending on the quantum efficiency curve.
 - Visualization of optical photon trajectories with respect to their energy or creator process.
- Enhanced debugging of the core library source code lead to opening more than [10 bug reports](#) on the ROOT (C++) forum.

Software Developer • Research Assistant

[Bowling Green State University \(BGSU\)](#), Bowling Green, OH, USA.

Aug 2014 - May 2020

- Wrote three desktop GUI programs for spectra fitting and interpretation (C++, CMake, ROOT, Qt, Java)
 - GitHub repositories contain over 10k lines of code in total: [TLIST Processor](#), [SW Calculator](#), [RooPositron](#).
 - Extended default ROOT GUI library (Qt-based) to support the MVP design pattern.
- Developed static website (Hexo, Gulp, Bootstrap) and visual identity for the [SelimLab](#) research group. Website has a 99% Google performance rank and features 700 ms time to interactive metrics.
- Maintained local Apache HTTP server physics.bgsu.edu hosting over 10 websites at the BGSU.
- Created website for the [ICPA-18](#) international conference with registration (over 150 users) and payment system workflow (WordPress, PHP, Recurly.js), and [landing pages](#) for events.

Frontend Developer, UI/UX Designer • Freelance

Sep 2012 - Current

- Designed and built online e-commerce store [Sticker Store LLC](#) with static website generator (Figma, Hexo, Snipcart, Bootstrap, SASS, EJS, Node.js).
 - Improved the Google PageSpeed Insights metrics (CLS, LCP) up to 97%.
 - Created a recursive script to export over 300 products from YAML file to Google Merchant.
 - Optimized SEO. Project reached over 1400 organic monthly users.
- Made iOS application (Swift, UIKit, storyboards) for the [We.Team](#) messenger (more than 3k monthly downloads in AppStore). Participated in cloud-based messenger development with enhanced file sharing capabilities (HTML, React JS, SASS).
- Migrated the landing page for [Sweetbridge](#) company from WordPress to Jekyll static site generator (Ruby, CSS). This resulted in a 70% improvement in the page load time.
- Developed the front-end part (Angular.js, HTML, LESS) for [Lili Social](#) network.
 - Assisted with iOS mobile application (Ionic).
 - Enabled SEO crawling of over 1000 Angular.js pages with Google bot.
- Web design.
 - Designed logos, UI/UX prototypes (Figma, Sketch, Illustrator) and branding identity for over [10 different companies](#).
 - Converted numerous design assets and mockups into responsive HTML and CSS.
 - Mocked up and integrated dozens of cross-browser responsive email templates.

Full Stack Web Developer, Web Designer

[Gridnine Systems](#), Moscow, Russia.

Apr 2011 - Aug 2014

- Prototyped and designed interactive mockups for [Otixo](#) cloud file integrator (Balsamiq, Adobe Creative Suite). Utilized Google Web Toolkit (GWT) Model-View-Presenter (MVP) framework to develop application frontend (JavaScript, responsive CSS).
- Responsible for the front-end development of the [ATH American Express](#) – the largest travel management company in Russia (JavaScript, Backbone.js, and RequireJS). Increased the front-end load time by over 30%.
- Implemented image processing servlets on the backend to generate banners for five different social networks (PHP, ImageMagic).
- Wireframed and sliced to web pages numerous UI/UX mockups for web applications (Balsamiq, Photoshop, HTML and CSS).

Education

Bowling Green State University (BGSU) • Ohio, USA

Aug 2014 - May 2020

Ph.D. in Photochemical Sciences • GPA 3.423. Novel developments in positron annihilation spectroscopy techniques—from experimental setups to advanced processing software. [View manuscript](#).

British Higher School of Art and Design (BHSAD) • Moscow, Russia

Dec 2011 - Feb 2012

Three-month intensive in Graphical Design and Visual Communications. Lectures and hands-on experience in graphic design and user interfaces.

Professional Networks

- Discover my professional contacts [on LinkedIn](#) (200+ connections).
- Find examples of my code [on GitHub](#) (50+ repositories).
- Check out my UI design portfolio [on Dribbble](#) (50+ shots).

Interests

Linux and open-source software. Hosting an [open-source project](#) aimed at keyboard remapping under Linux (over 250 stars on GitHub).